

ORCHIDACEÆ HALCONENSES: AN ENUMERATION OF THE
ORCHIDS COLLECTED ON OR NEAR MOUNT HALCON,
MINDORO, CHIEFLY BY ELMER D. MERRILL.

By OAKES AMES, A. M., F. L. S.

Most of the orchids enumerated in this paper were collected by *Elmer D. Merrill* in Mindoro at high altitudes on Mount Halcon. In addition, those species have been included here which were found near Mount Halcon during April and May, 1905, by *R. C. McGregor*, and in June, 1906, by *M. L. Merritt*. Among the species are many known to come from Java, Sumatra and Borneo; and, aside from the new ones, which constitute about half of the orchids in this paper, there are several interesting additions to the Philippine flora.

I have adopted the sequence of genera proposed by *Pfitzer* in *Engler & Prantl's* "Die natürlichen Pflanzenfamilien" and have arranged the species alphabetically under their respective genera. The notes relative to the geographical distribution of species that occur outside of the Philippine Islands have been made from lists and floras; therefore they are not definitive, as closely allied species are not infrequently confused by authors, and their ranges consequently exaggerated.

The types of the new species herein described are in the herbarium of the Bureau of Science at Manila. Usually cotypes are to be found in my own herbarium.

NEUWIEDIA Bl.

N. veratrifolia Bl. in *Hoey. & De Vriese, Tijdschr. 1: 142 (1834)*.

Terrestrial, ridge forest, at 2,300 ft. alt. on Mount Halcon, flowers yellow, Nov. 8, 1906, *Merrill* (No. 5681).

APOSTASIA Bl.

Apostasia Wallichii R. Br. *Wall. Cat. 4448 (1828)*.

Terrestrial in ridge forest at 3,000 ft. alt. on Mount Halcon, flowers yellowish (old), probably white when young, Nov. 10, 1906, *Merrill* (No. 5521). Terrestrial in humid forest on ridge at about 1,000 ft. alt. on Mount Halcon, flowers odorless, yellowish white, Nov. 2, 1906, *Merrill* (No. 5639).

Nepal, Assam, Khasia, Perak, Ceylon, Penang, Sumatra, Borneo, Java, New Guinea. Doubtfully ascribed to Luzon, P. I.

HABENARIA Willd.

Habenaria (§ *Seticaudae*) **alagensis** Ames sp. nov.

Plants about 6 dm. high, leafy at the base. Leaves oblong-lanceolate, acuminate, acute, about 2 dm. long, about 3 cm. wide. Floral bracts lanceolate, acuminate, very acute, 1.5–2 cm. long, shorter than the ovary. Ovary 3 cm. long, narrowed above into an elongated, slender neck. Flowers greenish, odorless, in an elongated loose raceme. Lateral sepals somewhat elliptical, deflexed, 1 cm. long. Upper sepal strongly concave, 1.4 cm. long. Petals 1.4 cm. long, 1 mm. wide, simple, linear above the dilated base, where they are 2.5 mm. wide and anteriorly protuberant. Labellum about 1.2 cm. long simple, strongly deflexed beyond the middle, caudate-tipped. Spur about 2 cm. long, very slender above the middle, strongly incurved and dilated-clavate toward the apex, resembling somewhat the abdomen of an ichneumon fly (*Ophion purgatus*). Anther canals much exceeding the stigmatic processes.

Terrestrial in humid forest at 400 ft. alt. along the Alag River, Nov. 5, 1906, Merrill (No. 5803).

Habenaria angustata (Bl.) O. K. Rev. Gen. Pl. 2: 664 (1891).—*Mecosa angustata* Bl. Bijdr. 404, fig. 1 (1825).

Terrestrial in mossy forest at 8,000 ft. alt. on Mount Halcon, Nov. 20, 1906, Merrill (No. 5802).

The material on which my determination is based is not very satisfactory for a sure diagnosis.

Java, Borneo.

Habenaria (§ *Mecosa*) **halconensis** Ames sp. nov.

Plant about 3 dm. high. Leaves much reduced, cordate-ovate to lanceolate, acute about 4 cm. long, 2–3 cm. wide, passing above into clasping lanceolate, acute bracts. Floral bracts exceeding the ovaries, lanceolate, acute, about 1 cm. long. Flowers green, in a loose, erect raceme. Lateral sepals linear-oblong, acute, about 1 cm. long, 2.5–3 mm. wide. Upper sepal broadly ovate, obtuse, 9 mm. long, about 6 mm. wide. Petals simple, lanceolate, falcate, obtuse, 8 mm. long, 4.5 mm. wide at base. Labellum simple, linear-oblong, tapering gradually to the obtuse tip, 11 mm. long, 3 mm. wide at base, 1 mm. wide near the tip. Spur nearly straight, slightly exceeding the labellum in length, 12 mm. long. (Uppermost flowers slightly smaller in all their parts than the lowermost.)

Terrestrial in open heath, at 8,000 ft. alt. on Mount Halcon, Nov. 20, 1906, Merrill (No. 5835).

The material from which the above description is drawn is somewhat scrappy and not well provided with foliage. The flowers are much like those of *Habenaria angustata* O. K., but considerably larger and different in detail.

CRYPTOSTYLIS R. Br.

Cryptostylis arachnites (Bl.) Hasskarl Cat. Bog. 48 (1844); Reichb. f. Bonpl. 5: 36 (1857).—*Zosterostylis arachnites* Bl. Bijdr. 419, fig. 32. (1825).

Terrestrial in forest at 3,000 ft. alt. on Mount Halcon, petioles and leaves mottled. Nov. 10, 1906, *Merrill* (Nos. 5478, 5488).

Ceylon, S. India, Malay Peninsula, Java, Borneo.

GALEOLA Lour.

Galeola Hydra Reichb. f. Xen. Orch. 2: 77 (1862).—*Galeola Kuhlii* Reichb. f. Xen. Orch. 2: 78.—*Erythrorchis Kuhlii* Reichb. f. loc. cit. t. 119.

Near the Baco River, saprophyte on dead tree trunk, Apr. 11, 1903, *Merrill* (No. 1811).—Baco River, Apr.–May, 1905, *R. C. McGregor* (No. 225).

“Whole plant yellowish, leafless. This species grew on a dead stump near the edge of an old clearing, in a very humid forest apparently rooting in the ground at the base of the stump. The Baco Valley is a very broad, mostly heavily timbered plain not much above the sea level (perhaps 10 m.), 6 or 8 miles inland. It is a very humid locality owing to the proximity of Mount Halcon to the north and west.”—*Field-notes by the collector.*

India, Tenasserim, Penang, Perak, Singapore, Malacca, Java and Sumatra.

APHYLLORCHIS Bl.

Aphyllorchis pallida Bl. Bijdr. fig. 77 (1826), Mus. Bot. Lugd.-Bat. 1: 30.

Terrestrial in humid forest on ridges at 1,000 ft. alt. along the Binabay River, Nov. 2, 1906, *Merrill* (No. 5810).—Terrestrial in ridge forest, at 2,800 ft. alt. on Mount Halcon, Nov. 10, 1906, *Merrill* (No. 5811).

Java.

VRYDAGZYNEA Bl.

Vrydagzynea albida Bl. Fl. Jav. Orch. 62, t. 19, f. 2. (1858).—*Etacria albida* Bl. Bijdr. 410 (1825).

Terrestrial in forest at 850 ft. alt. along the Binabay River, flowers white, Nov. 4, 1906, *Merrill* (No. 6125).

The material on which the above determination is based differs in several minor details from the specimens preserved at Leiden, which constitute *Blume's* type, but is not sufficiently different for separate treatment at this time.

Java, Sumatra.

CYSTORCHIS Bl.

Cystorchis aphylla Ridl. Journ. Linn. Soc. 32: 400 (1896).

Terrestrial on forested ridge at about 1,000 ft. alt. on Mount Halcon, plant white, bracts pinkish, Nov. 8, 1906, *Merrill* (No. 5662).—Saprophyte, ridges in forest, about 1,000 ft. alt. along the Binabay River, whole plant salmon pink, base and tips of floral segments paler, Nov. 2, 1906, *Merrill* (No. 5797).

Malay Peninsula and Java.

HERPYSMA Lindl.

Herpysma Merrillii Ames sp. nov.

Plants 1–3 dm. high. Rhizome creeping. Leaves about 5, ovate-lanceolate, shortly acuminate, acute, rounded at the base, 5–7 cm. long, about 3 cm. wide, passing into slender petioles. Base of the petioles

scarious, sheathing the stem. Peduncle sparsely pubescent, with about 3 lanceolate, scarious, about 1 cm. long bracts below the loose, racemose inflorescence. Floral bracts linear-lanceolate, acute, scarious, about 1 cm. long. Flowers white. Lateral sepals linear-oblong, about 1.2 cm. long, 2 mm. wide, concave, lightly carinate, cucullate with several hairs at the tip. Upper sepal similar to the laterals, broader, adhering lightly to the petals. Petals 1.2 cm. long, spathulate, obtuse, linear below the middle, free from each other at the base, cohering above the middle by their inner margins. Labellum adhering to the column, produced at base into a rather slender bilobed-tipped spur which protrudes between the lateral sepals; free portion narrow, a little dilated beyond the column, then 4-lobed; proximal lobes divaricate, oblong, obtuse, 1.5 mm. long, 1 mm. wide, separated from the distal lobes by a short 1 mm. long claw or isthmus; distal lobes divaricate, 1.5 mm. long, about 2 mm. wide, margin irregular; on the disc two thin longitudinal lamellæ, free at the obliquely truncate apex. Two wart-like calli are situated in the spur near its base, on the dorsal wall. From tip of spur to apex of labellum 1.5 cm.

Terrestrial in damp ravine, by small stream on Mount Halcon, Nov. 9, 1906, *Merrill* (No. 5836).

ZEUXINE Lindl.

Zeuxine luzonensis Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Terrestrial in forest at 2,800-4,000 ft. alt. on Mount Halcon, flowers white with faint odor, sepals purplish green or brownish, Nov. 13, 1906, *Merrill* (No. 5841).

CHEIROSTYLIS Bl.

Cheirostylis octodactyla Ames sp. nov.

Related to *C. Griffithii* Lindl. Plants rather stout in relation to their height, 4-8 cm. tall, few-flowered. Leaves ovate-lanceolate, acute, 0.7-2 cm. long, 5-11 mm. wide, 5-6 mm. apart on the stem. Petioles short, sheathing at base. Flowers one or two, white, 1 cm. long, standing at right angles to the erect stem. Lateral sepals united nearly to the apex, lanceolate, subacute, 8 mm. long. Upper sepal oblong-lanceolate, acute, somewhat dilated near the base, 8 mm. long. Petals lightly adhering to the upper sepal, linear-spathulate, about 8 mm. long, 2 mm. wide near the tip. Labellum linear-oblong, about 9 mm. long to the tip of the slightly dilated 8-fingered apex, 2.5 mm. wide at base; on each side a row of 7-8 setæ. Digitate divisions of the apex 3 mm. long.

Terrestrial in very dense mossy thicket on ridge at 8,200 ft. alt. on Mount Halcon, Nov. 22, 1906, *Merrill* (No. 5834).

GOODYERA R. Br.

Goodyera sp.

Flowers too much withered for analysis.

Leaves slightly mottled, *i. e.*, the veins and veinlets white, above, inflorescence old, Mount Halcon, Nov. 16, 1906, *Merrill* (No. 5512).

MYRMECHIS Bl.

Myrmechis gracilis Bl. Fl. Jav. Orch. 64, t. 21, f. 2 (1858).—*Anoectochilus gracilis* Bl. Bijdr. 413 (1825).

Mount Halcon, June 15-27, 1906, *M. L. Merritt* (Nos. 4432, 4460).

Java, Japan.

HAEMARIA Lindl.

Haemaria Merrilli Ames sp. nov.

Plants erect or ascending, up to 3 dm. high, leafy at the base. Leaves 5-7, ovate-lanceolate, acute, 1.5-3 cm. long, 1-1.5 cm. wide. Peduncle pubescent, provided with about 5 closely appressed, lanceolate, scarious 1-2 cm. long bracts. Flowers whitish, in a rather dense, short raceme. Floral bracts exceeding the ovaries, narrowly lanceolate, margin ciliate. Lateral sepals triangular-lanceolate, obtuse, 1-nerved, about 6 mm. long, slightly exceeding 2 mm. in width at the base. Upper sepal adhering lightly to the petals, lanceolate, 1-nerved, about 6 mm. long, slightly exceeding 2 mm. in width. Labellum about 5 mm. long, broadly unguiculate from a short, round, saccate base; margins of the claw erect (involute?) above; the claw is dilated into a transversely oblong, retuse, mucronate lamina with a crenate or bluntly-toothed margin; claw about 3 mm. long; lamina 4 mm. wide, 2 mm. long. Within the sac 2 roundish sessile calli are situated.

Terrestrial in mossy forest at 4,300 ft. alt. on Mount Halcon, flowers white, odorless, calyx greenish, Nov. 13, 1906, *Merrill* (Nos. 5840, *type*, and 5819).

HYLOPHILA Lindl.

Hylophila rubra Ames Orchidaceæ, fasc. 2 (1907) *ined.*

At 4,300 ft. alt. on Mount Halcon, flowers brownish red, June 15-27, 1906, *M. L. Merritt* (No. 4378).

TROPIDIA Lindl.

Tropidia mindorensis Ames sp. nov.

Plants about 4 dm. tall, slender, graceful, branching. Stems about 2 mm. thick, clothed by the sheathing bases of the numerous, alternate, linear-lanceolate, acuminate, acute, 3-5-nerved, 10-15 cm. long, 1-2 cm. wide leaves. Racemes leaf-opposed, short, few-flowered, not exceeding 3 cm. long. Peduncle clothed with imbricating, nervose bracts. Pedicels comparatively stout, about 5 mm. long. Flowers yellowish white, tinged with green, odorless, about 1.2 cm. long. Lateral sepals about 1.2 cm.

long, 3 mm. wide near the base, oblong-lanceolate, acute. Upper sepal about 9 mm. long, ovate-lanceolate, acute. Petals narrowly lanceolate, slightly carinate dorsally along the median nerve, 7 mm. long, about 2.5 mm. wide. Labellum 7 mm. long, apex strongly deflexed, subacute, saccate; lamina somewhat rhombic in outline, intramarginally bicarinate.

In humid forest, terrestrial, at 900 ft. alt. along the Binabay River, Nov. 2, 1906, *Merrill* (No. 5552).

In habit *T. mindorensis* recalls *T. graminea* Bl., differing from our species mainly in its smaller, terminal raceme and flowers. The measurements given above for the height of the plant apply to specimens which appear to have been broken. Specimens with roots were not collected by Mr. *Merrill*.

NEPHELAPHYLLUM Bl.

Nephelaphyllum mindorensis Ames. sp. nov.

Closely allied to *N. pulchrum* Bl.

Plants about 2 dm. tall. Rhizome creeping, slender, rooting at intervals. Stems purple. Leaves with the under surface uniformly dark purple, upper surface mottled, ovate-lanceolate, acuminate, acute, 8–10 cm. long, 3–5.5 cm. wide near the base. Petioles relatively slender, about 3 cm. long. Peduncles exceeding the leaves, clothed with several scarious, tubular, acute sheaths. Inflorescence loosely few-flowered. Bracts about 1 cm. long, linear, acute, scarious, somewhat shorter than the pedicels of the white flowers. Lateral sepals linear-acute, 1-nerved, 9 mm. long, 1.5 mm. wide. Upper sepal similar and equal to the laterals. Petals oblong, acute, slightly broader above than below the middle, 1-nerved, about 8 mm. long, 3 mm. wide. Labellum suborbicular, entire 9–10 mm. long, 9–10 mm. wide, with 3 prominent converging lamellæ near the apex, which pass basally into the main nerves of the hairy disc. Spur blunt, inflated, 4–5 mm. long.

Terrestrial in humid forest at about 900 ft. alt. along the Binabay River, Nov. 2, 1906, *Merrill* (No. 5623).

CHRYSOGLOSSUM Bl.

Chrysoglossum villosum Bl. Bijdr. 338, f. 7 (1825).

Terrestrial, flower odorless, or nearly so, petals twisted, dark purple in the middle, Binabay River, Nov. 2, 1906, *Merrill* (No. 5838).—Mount Halcon, June 15–27, 1906, *M. L. Merritt* (No. 4398).

The specimens on which the above determination is based agree too well with *C. villosum* Bl. to be separated from it specifically.

Java, Borneo, Perak.

DENDROCHILUM Bl.

Dendrochilum (§ *Platyclinis*) ***arachnites*** Reichb. f. Gard. Chron. n. s. 17: 256 (1882).

Epiphyte at 6,800 ft. alt. on Mount Halcon, flowers pale greenish, odorless, Nov., 1906, *Merrill* (No. 5511).

Endemic in the Philippines.

Dendrochilum (§ **Acoridium**) **bicallosum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Epiphyte in ridge forest at 2,500 ft. alt. on Mount Halcon, flowers brownish red, Nov. 28, 1906, *Merrill* (No. 5812).

Var. **minor** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

On ledge in ridge forest at about 1,500 ft. alt. on Mount Halcon, flowers pale salmon color, odorless, Nov. 8, 1906, *Merrill* (No. 5663).

Dendrochilum (§ **Acoridium**) **exile** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Epiphyte at 6,800 ft. alt. on Mount Halcon, flowers greenish yellow, odorless, Nov. 15, 1906, *Merrill* (No. 5721).

Related to *D. tenellum* Ames and *D. Williamsii* Ames, from which it differs in its much shorter leaves and very different labellum.

Dendrochilum (§ **Platyclinis**) **glumaceum** Lindl. Bot. Reg. 1841, Misc. p. 23.

Flowers white, slightly fragrant, Mount Halcon, June 15-27, 1906, *M. L. Merritt* (No. 4373).

Dendrochilum (§ **Acoridium**) **hastatum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

On bases of trees, flowers purplish, at 6,800 ft. alt. on Mount Halcon, Nov., 1906, *Merrill* (No. 5759).—Near same locality, June 15-27, 1906, *M. L. Merritt* (No. 4411).

Dendrochilum hastatum is clearly distinguished from all other species known to be natives of the Philippines by its hastate labellum.

Dendrochilum (§ **Acoridium**) **Hutchinsonianum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

In dense mossy thickets, on exposed ridge, both terrestrial and epiphytic at 8,000 ft. alt. on Mount Halcon, flowers flesh colored, odorless, Nov., 1906, *Merrill* (No. 5813).

D. Hutchinsonianum is related to *D. pumilum* Reichb. f. from which it differs in its larger proportions and flowers.

Dendrochilum (§ **Platyclinis**) **magnum** Reichb. f. Walp. Ann. 6: 240 (1861).

Epiphyte at 6,000 ft. alt. on Mount Halcon, flowers pale brownish, odorless, Nov. 15, 1906, *Merrill* (No. 5730).—Epiphyte in mossy forest on Mount Halcon, Nov., 1906, *Merrill* (No. 5611).

Although the labellum is not 3-lobed in any of the specimens examined, I am of the opinion that my determination of the Mount Halcon material, while provisional, is the only safe one, waiting an examination of the type of *D. magnum*. From a sketch of the labellum in Lindley's herbarium at Kew it would seem highly probable that the 3-lobed character was the result of malformation or injury.

Distribution obscure.

Dendrochilum (§ **Acoridium**) **mindoreense** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Epiphyte with greenish yellow flowers, Mount Halcon, Nov. 15, 1906, *Merrill* (No. 5729).—In same locality, Nov., 1906, *Merrill* (No. 5795).

Allied to *D. recurvum* Ames.

Dendrochilum (§ **Acoridium**) **pumilum** Reichb. f. Bonpl. 3: 222 (1855).

Mount Halcon, Nov., 1906, *Merrill* (No. 6196).

Endemic in the Philippines.

Dendrochilum (§ **Acoridium**) **recurvum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*—*Acoridium recurvum* Ames Proc. Biol. Soc. Wash. 19: 148 (1906).

Epiphyte in ridge forest at 8,400 ft. alt. on Mount Halcon, flowers yellowish, Nov., 1906, *Merrill* (No. 5831).—On mossy trees, at 8,200 ft. on Mount Halcon, Nov., 1906, *Merrill* (No. 5509).

Dendrochilum (§ **Acoridium**) **tenellum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*—*Acoridium tenellum* Nees & Meyen Nov. Act. Nat. Cur. 19 (suppl. 1): 131 (1843).—*Dendrochilum junceum* Reichb. f. Bonpl. 3: 222 (1855).

Epiphyte in mossy forest, on ridge, at 4,300 ft. alt. on Mount Halcon, flowers whitish, Nov., 1906, *Merrill* (No. 5839).—Near same locality, Nov., 1906, *Merrill* (No. 5720).

Dendrochilum (§ **Eudendrochilum**) **Woodianum** Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Epiphyte at 6,800–8,000 ft. alt. on Mount Halcon, flowers dark red, odorless, Nov. 15, 1906, *Merrill* (No. 5816).

This very interesting species belongs to the section *Eudendrochilum*, characterized by a lateral inflorescence produced on a leafless shoot. The floral structure is mainly that of *Acoridium*. The species is named in honor of Maj. Gen. Leonard Wood, through whose interest the expedition to Mount Halcon was undertaken.

Dendrochilum (§ **Acoridium**) sp.

In habit similar to *D. oliganthum* Ames. The immature flower shoots and withered remains of the persistent perianth insufficient for a sure diagnosis.

Mount Halcon, Nov., 1906, *Merrill* (No. 5540).

MICROSTYLIS Nutt.

Microstylis (§ **Eumicrostylis**) **alagensis** Ames sp. nov.

Plant about 25 cm. tall, slender, leafy at the base. Leaves lanceolate to ovate-lanceolate, acute, about 7 cm. long (sometimes those nearest the base much reduced), about 3 cm. wide. Flowers somewhat congested near the summit of the elongated peduncle. Bracts linear-lanceolate. Lowermost flowers purple, those along the middle of the spike yellowish. Lateral sepals suborbicular, 2 mm. long. Upper sepal elliptic-oblong, obtuse, slightly longer than the laterals. Petals linear-oblong, 2 mm. long. Labellum simple, broadly crescentiform, 2 mm. long from its tip to base of column, with a callus near the base; auricles (which form the horns of the crescent) triangular, acute, or subobtuse, distant from each other.

Terrestrial in humid forest at 400 ft. alt. along the Alag River, flowers odorless, Nov. 5, 1906, *Merrill* (No. 5801).—In forests along the Alag River, Nov., 1906, *Merrill* (No. 5807) type.

Microstylis (§ **Eumicrostylis**) **binabayensis** Ames sp. nov.

Plant about 3 dm. tall, leafy at the base. Leaves ovate-lanceolate, acuminate, acute, or subobtuse, 6–9 cm. long, 3.5–8 cm. wide, broadest near the base. Petioles about 2 cm. long, those of the lower leaves sheathing with their bases the bases of the petioles of the leaves above. Peduncle about 2 dm. long, rather stout. Bracts linear, deflexed, about 5 mm. long, shorter than the pedicels of the large yellow odorless flowers.

Pedicels of the lowermost flowers about 1 cm. long, very slender. Lateral sepals elliptic to suborbicular, relatively small, about 3 mm. long, very obtuse. Upper sepal oblong, obtuse, convex, 4.5–5 mm. long. Petals linear, about 4 mm. long. Labellum auriculate; auricles (or lateral lobes) dolabriform, obtuse, 5.5 mm. long, about 3 mm. wide; middle lobe 4 mm. wide, oblong; 6.5 mm. long, from the rounded tip to base of column; monocallose at the base.

Terrestrial in forests at 1,000 ft. alt. along the Binabay River, Dec. 4, 1906, *Merrill* (No. 5804).

***Microstylis* (§ *Eumicrostylis*) *dentata* Ames sp. nov.**

Leafy plants with elongated strict racemes of small flowers. Leaves 5 or 6, lanceolate, very acute, about 10 cm. long, 2–3.5 cm. wide, bases imbricating, sheathing the stem. Peduncle elongated, 2–5 dm. long, often copiously bracteate. Bracts linear, deflexed, about 1 cm. long. Lateral sepals elliptic, very obtuse, 2 mm. long, about 1.5 mm. wide. Upper sepal similar to the laterals. Petals elliptic-oblong, very obtuse, about 2 mm. long. Labellum 3-lobed, auriculate; auricles obtuse, 1 mm. long; middle-lobe oblong, bifid, 1 mm. long; on the anterior margin of each lateral lobe 3 acute teeth are situated; at the base of the labellum under the column is a minute callus.

In forests at about 3,000 ft. alt. along the Alag River, Nov., 1906, *Merrill* (No. 5806) type.—In forests on Mount Halcon, Nov., 1906, *Merrill* (No. 5808).

***Microstylis* (§ *Eumicrostylis*) *Hutchinsoniana* Ames sp. nov.**

A species well characterized by the large, rotund, overlapping auricles of the 3-lobed labellum. Plants about 2 dm. tall. Leaves ovate, acuminate, 4–6 cm. long, about 2.5 cm. wide, petiolate. Petioles 2 cm. long. Peduncle graceful, exceeding the leaves. Bracts linear, acute, the lowermost, 6 mm. long. Flowers comparatively large, about 5 mm. across, pale purple, odorless (greenish when dry). Pedicels very slender, 5–7 mm. long. Lateral sepals elliptical, very obtuse, 3 mm. long, margin very strongly revolute. Upper sepal 3.5 mm. long, somewhat narrower in relation to its length than the lateral sepals. Petals linear, obtuse, about 3 mm. long. Labellum 3-lobed, lobes subequal; middle lobe broadly oblong, rounded at the tip, very obtuse, 3.5 mm. long from tip to base of column, about as broad as long; lateral lobes rotund or subreniform, overlapping behind the column, 4 mm. long, 3 mm. wide.

Terrestrial in forest at 2,300 ft. alt. on Mount Halcon, Nov. 9, 1906, *Merrill* (No. 5809).

This species is named in honor of Mr. W. I. Hutchinson, who was a member of the Mount Halcon Expedition.

***Microstylis* (§ *Commelinoides*) *Merrillii* Ames sp. nov.**

Distantly related to *M. commelinifolia* Zoll., from which it is to be distinguished by the very different, larger leaves and dissimilar flowers. Plants creeping, rooting at intervals. Roots long, slender, few. Rhizome

with several tubular bracts. Leaves numerous, those near the rhizome often much reduced (1 cm. long, 5 mm. wide), those nearest the inflorescence ovate-lanceolate, acute, comparatively large (2-4 cm. long, about 1.5 cm. wide). Peduncle graceful, ascending or erect, about 7 cm. long, provided with deflexed, linear, acute, about 4 mm. long bracts. Inflorescence loosely few-flowered. Pedicels slender, about 2 mm. long. Lateral sepals oblong-lanceolate, obtuse, 3 mm. long. Upper sepal similar to the laterals, but somewhat narrower. Petals linear, 3 mm. long. Labellum entire, bluntly sagittate, the auricles oblong, falcate, about 2 mm. long.

Terrestrial at base of cliff in dense forest, at 5,800 ft. alt. on Mount Halcon, Nov. 15, 1906, *Merrill* (No. 5820).

***Microstylis* (§ *Eumicrostylis*) *quadridentata* Ames sp. nov.**

Flowers similar in structure to those of *M. oculata* Reichb. f. Plants about 1.5 dm. tall. Leaves about 6, narrowly lanceolate, very acute, about 7 cm. long, 6 mm. wide, dilated into a sheathing base below the short petiole. Peduncle graceful, exceeding the leaves. Bracts linear, acute, the lowermost 4-5 mm. long, exceeding the short pedicels. Flowers purplish, in a rather strict raceme. Lateral sepals elliptic-ovate, very obtuse, rounded at the tip, 2 mm. long. Upper sepal similar to the laterals. Petals linear-oblong, about 2 mm. long, obtuse. Labellum auriculate, auricles triangular obtuse, less than 1 mm. long; blade of the labellum about 2 mm. long with a minute callus at base, shortly cleft at the apex, bidentate on each side at about the middle; distal tooth of each pair 1 mm. long, narrower and longer than the basal teeth.

Terrestrial in damp shaded ravine at 3,000 ft. alt. on Mount Halcon, *Merrill* (No. 5805).—Terrestrial in forest at about 2,500 ft. alt. on Mount Halcon, Nov. 10, 1906, *Merrill* (No. 5818) type.

CESTICHIS Pfitzer.

Cestichis disticha (Thou.) Pfitzer in Engler & Prantl's *Pflanzenfamilien* 2, pt. 6, p. 131 (1888).—*Malaxis disticha* Thouars *Orch. Iles Afr. t.* 88 (1882).—*Liparis disticha* Lindl. *Bot. Reg. sub t.* 882 (1825).

On ledge in ridge forest at 1,800 ft. alt. on Mount Halcon, flowers odorless, reddish (yellow when dry), Nov. 8, 1906, *Merrill* (No. 5643).—Epiphyte in humid forest at 650 ft. alt. along the Binabay River, Nov., 1906, *Merrill* (No. 5638).

The material on which my determination is based has the spathulate petals and very characteristic labellum of the figure in *Thouars's Flore des Iles Australes de L'Afrique* and agrees with *C. disticha* from Ceylon. The Mount Halcon plants are very unlike the *Liparis disticha* Lindl. of *Cuming's Philippine orchids* and should not be confused with it. The Mount Halcon plants are the only specimens of *C. disticha* which I have seen from the Philippines. In habit *C. gracilis* Ames might readily be mistaken for it, but the floral parts at once distinguish it. The *Cuming* plant in *Lindley's herbarium* at Kew, determined by *Lindley* as *Liparis*

disticha, is (?) *Cestichis Merrillii* Ames. Lindley's *Liparis gregaria*, if I am not mistaken, is referable to the present species.

Mauritius, Bourbon, Ceylon. (Distribution uncertain as several species wrongly referred to *C. disticha* by authors make an examination of material necessary in giving range.)

***Cestichis* (§ *Laxiflorae*) *halconensis* Ames sp. nov.**

A very distinct bifoliate species, about 3 dm. high. Pseudobulbs about 1.5 cm. long, somewhat cylindrical, covered by 4 or 5 distichous, acute sheaths when immature. Leaves oblong-lanceolate, very acute, 15–20 cm. or more long, about 3 cm. wide, contracted into a winged petiole. Peduncle graceful, strongly bialate, exceeding the leaves. Lowermost bracts elongated, linear-acute, 1–1.5 cm. long, those of the inflorescence about half as long as the slender pedicels. Pedicels of the lowermost flowers 1.5 cm. long. Inflorescence loosely many-flowered. Flowers grass-green, turning yellow with age. Lateral sepals oblong, very obtuse, 5 mm. long, 2 mm. wide. Upper sepal similar to the laterals. Petals linear, 5 mm. long, about 1 mm. wide. Labellum 5.5 mm. long, suborbicular from an oblong-cuneate base; distal margin crenulate and obscurely blunt-mucronate; in the middle of the claw is a fleshy subcucullate callus. Column 3 mm. long, rather slender, strongly arcuate near the summit.

Terrestrial in ridge forest at 1,200–2,200 ft. alt. on Mount Halcon, Nov. 8, 1906, *Merrill* (No. 5799).

***Cestichis Merrillii* Ames** *Orchidaceæ*, fasc. 1, p. 11, t. 3 (1905).

Epiphyte in mossy forest at 2,800 ft. alt. on Mount Halcon, flowers brownish-yellow, Nov. 12, 1906, *Merrill* (No. 5617).

The Mount Halcon plants have smaller flowers than the type.

***Cestichis philippinensis* Ames** *Orchidaceæ*, fasc. 1, p. 7, t. 2 (1905).

Epiphyte at 6,800 ft. alt. on Mount Halcon, flowers brownish-yellow, Nov., 1906, *Merrill* (No. 5764).

The lanceolate, acute labellum of this species is very characteristic.

OBERONIA Lindl.

***Oberonia McGregorii* Ames sp. nov.**

Closely allied with *O. ciliolata* Hook f. Plants caulescent, when in flower about 12 cm. high from base of stem to tip of the densely flowered cylindrical spike. Leaves distichous, obliquely spreading from below the middle, ensiform, about 4 cm. long, acute. Peduncle relatively stout, bracteate, minutely scurfy pubescent. Bracts linear-lanceolate, acuminate, acute, ciliate-pubescent, about 2 mm. long, exceeding the pedicels of the flowers. Ovaries finely pubescent. Lateral sepals ovate-lanceolate, or triangular-lanceolate, acute, ciliate 0.75 mm. long. Upper sepal nearly elliptical, subobtuse, 0.75 mm. long, ciliate. Petals linear-oblong, rounded at the tip, much shorter and narrower than the sepals, minutely ciliate. Labellum pandurate (or oblong, constricted at the middle),

coarsely several-toothed at the dilated tip, 0.75 mm. long, slightly auriculate at base.

Only one specimen seen, found on prostrate tree, Balete, Baco River, April 23, 1905, *R. C. McGregor* (No. 291).

***Oberonia mindorensis* Ames sp. nov.**

Allied to *O. aporaphylla* Reichb. f. Plants caulescent, 1.5–4 dm. or more tall from base of stem to tip of elongated, slender, densely flowered spike. Leaves distichous, 5–10 cm. or more long, acute or subobtusely, obliquely ascending. Upper half or two-thirds free. Spike 1–2.5 dm. long, about 5 mm. in diameter, somewhat scurfy pubescent. Bracts linear, about 2 mm. long. Flowers minute, greenish. Lateral sepals elliptic ovate, or ovate, 1 mm. long. Upper sepal similar to the laterals. Petals linear, obtuse, 0.75 mm. long. Labellum 1 mm. long, 3-lobed; middle lobe emarginate, about 1 mm. wide; lateral lobes not very conspicuous, prolonged slightly behind the column. In general outline the labellum is subpanduriform, emarginate, or equally 4-lobed.

Epiphyte on trees at 1,200 ft. alt. along the Alag River, Nov., 1906, *Merrill* (No. 5613).

PODOCHILUS Bl.

***Podochilus cornutus* (Bl.) Schlechter Mem. Herb. Bois. no. 21, p. 34 (1900).**—*Appendicula cornuta* Bl. Bijdr. 302 (1825).

On rotten log in forest at 600 ft. alt. along the Binabay River, Nov., 1906, *Merrill* (No. 5843).—Near same locality on tree fern, in humid forest, Nov., 1906, *Merrill* (No. 5541).

India, Malay Peninsula, Singapore, Java, Borneo, China and Luzon, P. I.

***Podochilus pendulus* (Bl.) Schlechter Mem. Herb. Bois. no. 21, p. 48 (1900).**—*Appendicula pendula* Bl. Bijdr. 298 (1825).

Epiphyte in forest at 2,400 ft. alt. on Mount Halcon, flowers yellowish, Nov. 10, 1906, *Merrill* (No. 5858).—On boulder in forest, Mount Halcon, Nov. 28, 1906, *Merrill* (No. 5697).

Malay Peninsula, Java, New Guinea and the Philippines.

?*Podochilus philippinensis* Schlechter Mem. Herb. Bois. no. 21, p. 49 (1900).

Growing on a fallen tree near the Baco River, Apr. 22, 1905, *R. C. McGregor* (No. 290).

My determination, while reasonably sure, is unfortunately based on a single, imperfect specimen.

?*Podochilus reflexus* (Bl.) Schlechter Mem. Herb. Bois. no. 21, p. 31 (1900).—*Appendicula reflexa* Bl. Bijdr. 301 (1825).

Epiphytic on trees along the Alag River, Nov., 1906, *Merrill* (No. 5842).

Material inadequate for a sure diagnosis, as the flowers are withered, the labellum is imperfect, and the specimens for the most part are in fruit.

Malay Peninsula, Java and Borneo.

***Podochilus xytriophorus* (Reichb. f.) Schlechter Mem. Herb. Bois. no. 21, p. 47 (1900).**—*Appendicula xytriophora* Reichb. f. Seem. Fl. Vit. 299 (1868).

Epiphytic at 500 ft. alt. along the Alag River, flowers odorless, greenish, labellum white, turning yellowish, throat purple, Nov. 6, 1906, *Merrill* (No. 5817).

Malay Peninsula, Borneo and the Philippines.

AGROSTOPHYLLUM Bl.

Agrostophyllum Merrillii Ames sp. nov.

Allied to *A. saccatum* Ridl. Plants stout, about 10 dm. tall, somewhat similar in habit and general conformation to *A. longifolium* Reichb. f. but with different flowers, the petals being broader. Leaves oblong, about 2 dm. long, about 2 cm. wide, rounded at base, tapering very gradually to the bilobed apex. Sheaths formed by the persistent bases of the leaves, smooth, about 7 cm. long. Inflorescence capitate, dense, about 2.5 cm. in diameter (3 cm. when pressed for the herbarium). Spikelets 3-4-flowered. Flowers white. Lateral sepals oblong-lanceolate, acute, 5 mm. long, 2-2.5 mm. wide. Upper sepal oblong, acute, 5 mm. long, about 2 mm. wide. Petals ovate-lanceolate, 5 mm. long, about 2 mm. wide. Labellum 5 mm. long; hypochil saccate, with blunt, rounded, erect lateral lobes, which are connected in front by a transverse plate or callus; epichil very broadly ovate, subacute, 3 mm. long, 4.5 mm. wide, rather fleshy. Column 3.5 mm. long, bent at the middle, above the bend provided with a blunt, fleshy, 0.5 mm. long process. Fruit about 9 mm. long.

Epiphyte in forest at 3,000 ft. alt. on Mount Halcon, Nov. 27, 1906, *Merrill* (No. 5844).

CERATOSTYLIS Bl.

Ceratostylis ramosa Ames and Rolfe Orchidaceæ, fasc. 2 (1907) *ined.*

Plants somewhat more slender than the type.

Mount Halcon, June 15-27, 1906, *M. L. Merritt* (No. 4418).

Ceratostylis subulata Bl. Bijdr. 306 (1825).—*Ceratostylis gracilis* Reichb. f. Xen. Orch. 2: 92, t. 127. not Bl.

Epiphyte on exposed ridge at 4,500 ft. alt. on Mount Halcon, flowers dark purple, Nov. 14, 1906, *Merrill* (No. 5766).

British India, Assam, Malay Peninsula, Borneo, Sumatra, Java and the Philippines.

Phaius Lour.**Phaius halconensis** Ames sp. nov.

Plants graceful, about 3 dm. high. Leaves 3, lanceolate-acuminate, acute, tapering to both ends, about 14 cm. long, 1.5-2 cm. wide. Scape rather graceful, sparsely pubescent, about 3 dm. long, clothed at intervals with loose, tubular sheaths. Floral bracts caducous. Flowers odorless, white, turning yellowish, about 8 mm. long, pubescent externally and sparsely so internally on the sepals and petals. Lateral sepals lanceolate, acute, 9-10 mm. long, 4 mm. wide near the base. Upper sepal similar to the laterals. Petals lanceolate, 3-nerved, 9 mm. long, slightly exceeding 3 mm. in width. Labellum 7 mm. long, 3-lobed; disc pubescent, bicarinate to the base of the middle-lobe, 6-7 mm. wide across the middle when flattened; lateral lobes ovate, obtuse, ragged-fimbriate on the anterior margin; middle lobe subcuneate, truncate, dentate, 3.25 mm.

wide at the tip, 2 mm. long, margin irregular or dentate. Column stout, 5 mm. long.

Terrestrial on steep, wooded, damp slopes at about 6,400 ft. alt. on Mount Halcon, Nov. 16, 1906, *Merrill* (No. 5513).

***Phaius mindorensis* Ames sp. nov.**

Plants about 3 dm. high, branching. Stems slender. Leaves 3-4, lanceolate, acute, 10-18 cm. long, 2.5-4 cm. wide. Bracts tubular, scarious. Peduncle slender, pubescent, with several tubular, inflated, obtuse bracts. Raceme loosely flowered. Flowers about 10 in number, yellowish (buds white). Floral bracts caducous. Ovary densely pubescent. Lateral sepals lanceolate, acute, 7 mm. long, 2.5 mm. wide. Upper sepal ovate-lanceolate, acute, 7-8 mm. long, about 3 mm. wide. Petals ovate acuminate, acute, 7 mm. long, 2.5 mm. wide near the middle. Labellum 6 mm. long, 3-lobed; lateral lobes about 1 mm. long, 1 mm. wide, oblong-truncate, margin with several irregular, short, blunt teeth; middle lobe flabelliform, retuse, apiculate, 1.75 mm. long, 3-5 mm. wide; disc pubescent, bicarinate, the carinae extending to the base of the middle lobe; when spread out the labellum is 7 mm. wide between the tips of the lateral lobes. Column relatively stout, about 3 mm. long.

Epiphyte in mossy forest at 4,300 ft. alt. on Mount Halcon, Nov. 13, 1906, *Merrill* (No. 5612).

P. mindorensis is closely allied to *P. halconensis* but differs from it in its smaller flowers, different labellum and broader leaves.

***Phaius* sp.**

This appears to be a new species but the material is in bad condition and rather scanty.

Terrestrial in humid forest at 700 ft. alt. along the Binabay River, flowers odorless, sepals green outside, brown-purple inside, labellum yellowish, Nov. 3, 1906, *Merrill* (No. 5800).

CALANTHE R. Br.

***Calanthe angustifolia* (Bl.) Lindl. Orch. Pl. 251 (1833).—*Amyglottis angustifolia* Bl. Bijdr. 369 (1825).—*Calanthe phajoides* Reichb. f. Bonpl. 5: 37 (1857).**

Terrestrial at 6,500 ft. alt. on Mount Halcon, flowers white, odorless, Nov. 15, 1906, *Merrill* (No. 5677).—At 7,250 ft. alt. on Mount Halcon, June 15-27, 1906, *M. L. Merritt* (No. 4454).

Java, Sumatra, and Malay Peninsula.

***Calanthe halconensis* Ames sp. nov.**

In habit similar to *C. pulchra* Lindl. Flowers pale straw yellow, or nearly white, labellum riddish-yellow, spur straight. Leaves oblong-lanceolate, acuminate, acute, about 4 dm. long, about 7 cm. wide, petiole about 2 dm. long. Scape with several ample bracteate sheaths, about 5 cm. long. Inflorescence rather densely many-flowered, nearly 2 dm. long,

about 4 cm. in diameter. Floral bracts fugacious. Pedicels slender, wiry, 7-10 mm. long. Lateral sepals subfalcate, acute, 11 mm. long, 3.5 wide. Upper sepal oblong-lanceolate, acute, 11.5 mm. long. Petals oblong-ob lanceolate, somewhat acuminate, acute, 1 cm. long, 4.5 mm. wide above the middle. Labellum quadrate, apiculate; plate 4 mm. long, about 4 mm. wide, sometimes constricted or obscurely lobed near the middle; obscurely if at all tricallose in the throat on the middle nerves. Spur glabrous, nearly straight, dilated slightly near the tip, 8 mm. long.

Terrestrial in forest at 2,300 ft. alt. on Mount Halcón, Nov. 9, 1906, *Merrill* (No. 5489).

***Calanthe McGregorii* Ames sp. nov.**

Leaves lanceolate, acuminate, acute, about 3 dm. long, about 8 cm. wide, long-petioled. Petioles about 2.5 dm. long. Scape sparsely pubescent about 9 dm. long, with several tubular, acute sheaths. Inflorescence rather strict. Bracts 5-10 mm. long, lanceolate, acute, persistent. Flowers white, with a yellow spot in the throat, numerous, small. Pedicels slender, elongated, about 2 cm. long. Lateral sepals oblong, acute, about 6 mm. long, 3 mm. wide. Upper sepal elliptic-lanceolate. Petals linear-oblong, acute, somewhat dilated near the middle, 6.5 mm. long, about 2 mm. wide. Labellum 3-lobed; middle lobe deeply cleft, the divisions about equal to the lateral lobes; lateral lobes 5 mm. long, 3.5 mm. wide, oblong, obtuse, broader at the apex than below the middle; middle lobe 7 mm. long divisions divaricate, spathulate, 3.5 mm. long, 2.5-3 mm. wide at the apex. On the disc near the column several papillæ are situated. Spur straight, glabrous, 8 mm. long.

Balete, along the Baco River, March 31, 1905, *R. C. McGregor* (No. 177).

***Calanthe mindorensis* Ames sp. nov.**

Leaves long-petiolate, petioles about 18 cm. long; lamina oblong-lanceolate to elliptic-lanceolate, acuminate, acute, about 3 dm. long, about 1 dm. wide. Scape 4 dm. or more long, sparsely pubescent, provided with several oblong, closely appressed, acute bracts. Floral bracts broadly ovate, acute, about 1 cm. long. Pedicels about 2 cm. long. Flowers very large, odorless, pale violet. Lateral sepals oblanceolate, falcate, acute, 1.5 cm. long, 7 mm. wide above the middle. Upper sepal lanceolate, 1.5 cm. long, acute. Petals spathulate-ob lanceolate, 1.5 cm. long, 5.5-6 mm. wide above the middle. Labellum 3-lobed; middle lobe 12 mm. long, 16 mm. wide, cuneate-obcordate or flabelliform, deeply cleft; lateral lobes 1 cm. long, 6 mm. wide, oblong, obliquely truncate; on the disc near the column is a 3-lobed or 3-plaited callus, beyond which are several rows of erect papillæ. Spur curved, glabrous, about 1.5 cm. long.

Terrestrial in ridge forest at 2,300 ft. alt. on Mount Halcón, Nov. 9, 1906, *Merrill* (No. 5525).

Calanthe pulchra (Bl.) Lindl. Och. Pl. 250 (1833).—*Amblyglottis pulchra* Bl. Bijdr. 371 (1825).—*Calanthe curculigoides* Lindl. Wall. Cat. 7340 (1828).

Terrestrial, border of forest at 2,300 ft. on Mount Halcon, Nov. 8, 1906, Merrill (No. 5850).—Terrestrial along the Alag River at 400 ft. alt., Nov. 5, 1906, Merrill (No. 5849).

Calanthe pulchra has yellow flowers.

Java, Sumatra, Singapore and Malay Peninsula, Malacca, Penang.

Calanthe triplicatis (Willem.) Ames Orchidaceæ, fasc. 2 (1907) *ined.*—*Orchis triplicatis* Willem. in Usteri Ann. Bot. 18: 52 (1796).—*Calanthe veratrifolia* R. Br. Bot. Reg. sub t. 573 (1821).—*C. furcata* Batem. Bot. Reg. 1838, Misc. p. 28.

Baco River, March, 1905, Merrill (No. 4065).

After a careful study of the rich collections of *Calanthe* in the herbarium of the Bureau of Science I am quite convinced that *C. furcata* is untenable as a distinct species. Although the average specimens from the Philippines are smaller than *C. triplicatis* they do not exhibit any structural characters which plainly separate them from it. The lobes of the labellum are very variable and the spur is frequently simple, with no indication of a furcate tip. Lindley considered the larger size of the lateral lobes of the labellum of *C. furcata* the chief distinction by which to separate it from *C. veratrifolia*, but this distinction fails absolutely if applied to a large series of specimens. Cuming's No. 2064 in the British Museum herbarium has large apical lobes on the labellum and leaves fully 3 dm. long by 6 cm. wide.

Japan to New South Wales, and from S. India to the Fiji Islands, New Guinea, Java, Cochin China, Ceylon, Formosa, Liu Kiu and Borneo. Very common in the Philippines.

PLOCOGLOTTIS Bl.

Plocoglottis Copelandii Ames sp. nov.—*P. acuminata* Ames Orchid. fasc. 1, p. 82 (1905), *not* Blume.

Rhizome creeping, sheathed with scarious, tubular bracts which persist as elongated fibers. Leaves elliptic-lanceolate, acuminate, acute, about 14 cm. long, 4.5–6.5 cm wide. Petioles 3–4 cm. long rather slender. Scape about 3 dm. long, graceful, pubescent, with several sheathing, tubular, obliquely truncate, acute bracts at intervals. Inflorescence an elongated, rather loose raceme of yellowish, red-brown spotted, odorless flowers. Rachis of the raceme rather densely pubescent. Floral bracts triangular-lanceolate, acute, about 4 mm. long, shorter than the pubescent pedicels of the flowers. Pedicels and ovary together 1.5 cm. long. Lateral sepals linear-lanceolate, acute, 1.5 cm. long, about 4 mm. wide. Upper sepal similar to the laterals but somewhat shorter. Petals linear, gradually tapering from the base to the acute apex, 11 mm. long. Labellum about 6 mm. long, 5 mm. wide at the tip, oblong-cuneate,

convex, with a long, acuminate, circinate tip which is invisible from above, being concealed by the apical margin. Column stout, 6 mm. long.

The type from Gimogan River, Negros, where it was collected on January 5, 1904, by *E. B. Copeland* (No. 134).—Growing in leaf mold in forests along the Baco River, April and May, 1905, *R. C. McGregor* (No. 308).—Terrestrial in humid forest at 700 ft. alt. along the Binabay River, flowers yellowish with purple spots, Nov. 3, 1906, *Merrill* (No. 5624).

A careful study of the material collected by *Merrill* and *McGregor* in Mindoro leads me to believe that it is conspecific with the specimens collected on the Island of Negros by *Copland* and is not the same as *Plocoglottis acuminata* Bl., although a closely allied species.

***Plocoglottis mindorensis* Ames sp. nov.**

Allied to *P. javanica* Bl. Plants 6–8 dm. or more tall, very slender, graceful, not much thickened at the base. Petioles about 2 dm. long. Leaf narrowly oblong-lanceolate, acuminate, very acute, tapering at both ends, about 3 dm. long, 2.5–5 cm. wide, smooth. Scape about 8 dm. long, pubescent, densely so near the summit, clothed at intervals with tubular, lanceolate, pointed sheaths. Bracts of the inflorescence rather rigid, triangular-lanceolate, acute, somewhat concave, pubescent, about 6 mm. long. Flowers purplish, rather numerous in loose racemes. Pedicels slender, pubescent, about 1 cm. long. Sepals externally pubescent, the laterals falcate-lanceolate, about 12 mm. long, 6 mm. wide near the middle. Upper sepal oblong-lanceolate, 1.3 cm. long, about 5 mm. wide. Petals linear, falcate, obtuse, 11 mm. long, 2–2.5 mm. wide. Labellum about 6 mm. long, cuneate-quadrate, about 9 mm. wide near the tip; in the middle of the anterior margin is a deflexed, triangular, 1 mm. long tooth.

Terrestrial in humid forest at 650–900 ft. alt. along the Binabay River, Nov. 3, 1906, *Merrill* (No. 5837).

SPATHOGLOTTIS BL.

***Spathoglottis aurea* Lindl.** Journ. Hort. Soc. 5: 34 (1850); Gard. Chron. n. s. 4: 92, f. 9 (1888).

At 4,250 ft. alt. on Mount Halcon, flowers yellow, June 15–27, 1906, *M. L. Merritt* (No. 4375).

Apical lobe of the labellum bilobed. The material on which my determination is based is not very satisfactory.

Java, Sumatra, Borneo and Malay Peninsula.

***Spathoglottis plicata* Bl.** Bijdr. 400, 401 (1825).

Flowers light purple, odorless, plants growing in damp soil among boulders along stream, Alag River, Nov. 6, 1906, *Merrill* (Nos. 5621–5815).

Malay Peninsula, Java, Sumatra, Borneo, Celebes, Moluccas, New Guinea, Solomon and Fiji Islands. Very common in the Philippines.

DENDROBIUM Sw.

Dendrobium (§ Grastidium) alagensis Ames sp. nov.

Allied to *D. salaccense* (Bl.) Lindl. Plants about 6 dm. tall. Stems 3–4 mm. in diameter, very graceful, comparatively slender, clothed by the tubular, sheathing bases of the numerous leaves. Leaves linear-lanceolate, acute, about 1.5 cm. apart, about 14 cm. long, about 1 cm. wide, very unequally bilobed at the apex. Flowers 2, pale straw-yellow, greenish tinged, leaf-opposed. Pedicels elongated, 1 cm. long, very slender. Lateral sepal oblong-lanceolate, subacute, 11 mm. long, 7 mm. wide at base. Upper sepal oblong-lanceolate, 11 mm. long, 3.5 mm. wide, subobtuse. Petals oblong, obtuse, 8–9 mm. long, about 3 mm. wide. Labellum 9 mm. long, with several raised, longitudinal nerves, 3-lobed, cuneate at base; lateral lobes comparatively small, triangular, acute or subobtuse, 1 mm. long, 0.75 mm. wide at base; middle lobe suborbicular, 3.5 mm. long, 3.75 mm. wide; from the tip of the lateral lobes to the base of the labellum 5.5 mm.

Epiphyte on trees along the Alag River, Dec. 2, 1906, *Merrill* (No. 5846).

Dendrobium (§ Virgatae) polytrichum Ames Orchidaceæ, fasc. 2 (1907) *ined.*

Epiphyte in humid forest at 800 ft. alt. along the Alag River, flowers white, fragrant, Nov. 5, 1906, *Merrill* (No. 5630).

In habit similar to *D. setifolium* Ridl., having subulate leaves. The flowers, however, are well characterized by the 3-lobed labellum of which the apical lobe is provided along the margin with an elongated, copious fringe.

Dendrobium Victoriae-Reginae Loher Gard. Chron. ser. 3, 21: 399 (1897), var. **exile** Ames var. nov.

Stems ramose, graceful, slender, 1.5–3 mm. thick. Leaves linear-lanceolate, 6 cm. long, 9 mm. wide below the middle, acuminate, bilobed at the tip, lobes acute. Lateral sepals 2 cm. long, 6 mm. wide. Labellum 2.2 cm. long, 9 mm. wide near the apex. Similar to the type but much more slender and graceful throughout. Distinguished mainly by the more slender stems.

Epiphyte in dense, wet, mossy forest, at 8,000 ft. alt. on Mount Halcon, flowers odorless, bluish purple, petals white at base, Nov. 20, 1906, *Merrill* (No. 5503) type.—At 6,500 ft. alt. on Mount Halcon, flowers purplish, June 15–27, 1906, *M. L. Merritt* (No. 4438).

Endemic in the Philippine Islands.

Dendrobium sp.

Two plants of the section *Aporum* without flowers. Indeterminable.

Growing on fallen trees along the Baco River, April–May, 1906, *R. C. McGregor* (No. 286).

Dendrobium sp.

Material not sufficient for description.

Epiphyte at 5,000 ft. alt. on Mount Halcon, Nov. 26, 1906, *Merrill* (No. 5577).

The paucity of *Dendrobium* species in the collections from Mount Halcon and its neighborhood is noteworthy.

ERIA Lindl.

Eria aëridostachya Reichb. f. ex Lindl. Journ. Linn. Soc. 3: 48 (1859); Reichb. f. in Seem. Fl. Vit. 301.

Epiphyte at about 6,400 ft. alt. on Mount Halcon, flowers brown-purple, odorless, Nov. 15, 1906, *Merrill* (No. 5518).

Philippines and Fiji Islands; also ascribed to Java and the Malay Peninsula. Several closely allied species are likely to have been confused in the literature of distribution under the name *E. aëridostachya*. Lindley's plant and Reichenbach's Seemann plant agree.

Eria* (§ *Trichotosia*) *binabayensis Ames sp. nov.

Allied to *E. oligantha* Hook. f. Plants rather stout, 4-5 dm. tall. Stems about 5 mm. in diameter. Leaves oblong-lanceolate, tapering gradually toward the point, about 1 dm. long, 1-2 cm. wide, rigid, coriaceous, pubescent. Inflorescence leaf-opposed, clothed with dense, cinnabar-red tomentum. Bracts about 1 cm. long. Raceme short, 3 cm. long, probably becoming longer as the flowers develop. Lateral sepals triangular-lanceolate, densely tomentose externally, 1 cm. long, about 8 mm. wide at base. Upper sepal oblong, narrower than the laterals. Petals linear-spathulate, subobtuse, 7-8.5 mm. long, 2 mm. wide above the middle. Labellum 1 cm. long, narrowly cuneate at base, then gradually dilated to within 2 mm. of the tip, where it is constricted and about 4 mm. wide; above the constriction it is again dilated into a transversely oblong, 6-7 mm. wide plate; disc bicarinate.

Epiphyte in humid forest along the Binabay River, flowers nearly flesh colored, the narrow petals white, labellum with yellow-purple spots, Nov. 3, 1906, *Merrill* (No. 5661).

It is highly probable that the racemes of the specimens examined had not attained their full length when collected. At maturity they most likely resemble the racemes of such closely allied species as *E. vulpina*, *E. ferox*, and *E. velutina*.

Eria* (§ *Hymeneria*) *compacta Ames. sp. nov.

Roots elongated, much branched. Pseudobulbs approximate, elongated-pyriform, about 5 cm. long, about 1 cm. in diameter at base, bifoliate. Leaves rigid, coriaceous, oblong-lanceolate, obtuse, 4.5-5.5 cm. long, 10-14 mm. wide. Inflorescence about 3 cm. long. Bracts ovate-lanceolate, 5 mm. long, about 2 mm. wide, acute, equaling or exceeding the pedicels of the flowers. Lateral sepals triangular-lanceolate, acute, 6 mm. long, 2.5 mm. wide at base. Upper sepal lanceolate, slightly broader

than the laterals. Petals lanceolate, acute or subacute, about 6 mm. long, 2 mm. wide, 3-nerved. Labellum ovate-lanceolate, subobtuse, cordate at base, 4 mm. long, 1.75 mm. wide near the base.

At 5,250 ft. alt. on Mount Halcon, June 15-27, 1906, *M. L. Merritt* (No. 4420).

The type consists of a single specimen and is unfortunately not in good condition. The flowers are not very numerous, and the only raceme seen may not be wholly characteristic.

Eria cymbiformis J. J. Smith Rec. Trav. Bot. Neerland. 1: 152 with fig. (1904).

Epiphyte in ravine forest at 4,000 ft. alt. on Mount Halcon, flowers white, with faint odor, Nov. 26, 1906, *Merrill* (No. 4847).

Sumatra.

Eria* (§ *Trichotosia*) *halconensis Ames sp. nov.

Plant comparatively slender, about 5 dm. tall. Stems about 7 mm. in diameter near the base, tapering gradually upwards. Leaves linear-lanceolate, acuminate, acute, pubescent, about 1 dm. long, 7-11 mm. wide. Racemes leaf-opposed, shorter than the leaves, about 5 cm. long, somewhat flexuose, densely covered with reddish yellow hairs. Bracts broadly ovate or suborbicular, 4-6 mm. long, hairy, abruptly acuminate. Lateral sepals triangular, externally hairy, subacute, 7 mm. long about 4 mm. wide at base. Upper sepal oblong, externally hairy. Petals linear, subspathulate, tapering to a subacute or subobtuse apex, 6 mm. long, 1.5 mm. wide. Labellum 7 mm. long, linear-cuneate at the base, dilated above, then constricted within 2 mm. of the tip, 3-lobed; lateral lobes minute, obtuse, formed by the constriction; middle lobe subquadrate, apiculate, 3-4 mm. wide; disc with a prominent mid-nerve. Mentum about 3 mm. long.

Epiphyte on exposed ridge at 4,500 ft. alt. on Mount Halcon, flower pink-purple, Nov. 19, 1906, *Merrill* (No. 5742).—Terrestrial on banks in mossy forest, at 6,000 ft. alt. on Mount Halcon, flowers pink-purple, Nov. 15, 1906, *Merrill* (No. 5510) type.

This is a rather graceful species, the slender stems sometimes attaining 9 dm. in length and less than 1 cm. in thickness at base.

Eria* (§ *Hymeneria*) *Hutchinsoniana Ames sp. nov.

Allied to *E. tenuifolia* Ridl. Rhizomes woody, about 5 mm. in diameter. Pseudobulbs 5 cm.-1 dm. apart, abbreviated, 1.5-3 cm. long, clothed with scarious sheaths, leafy at the summit. Leaves linear-lanceolate, about 1 dm. long, about 8 mm. wide, acute, tapering gradually toward both ends. Inflorescence few-flowered, about 6 cm. long, near the summit of the pseudobulbs. Flowers white and purple. Peduncle, pedicels, and ovaries covered with rufous or dark yellowish hairs. Bracts lanceolate, acute, about 4 mm. long, about 1.5 mm. wide. Lateral sepals triangular-lanceolate, acute, slightly protuberant anteriorly

at base near the apex of the column foot, about 8 mm. long, 2.5 mm. wide near the middle, broader below. Upper sepal lanceolate, acute, about 9 mm. long, narrower than the laterals. Petals linear-lanceolate, or linear-oblong, subobtuse, 3-nerved, about 8 mm. long, 2 mm. wide near the middle. Labellum ecallose, smooth, 5 mm. long, basal half with the sides erect (conduplicate when dry), apical half oblong, rounded at the apex, 2 mm. wide.

Terrestrial in mossy ridge forest at 7,000 ft. alt. on Mount Halcon, very abundant but only one plant found in flower, flowers white, base of tube purple within, Nov. 16, 1906, *Merrill* (No. 5514).

***Eria* (§ *Convolutae*) *Merrillii* sp. nov.**

Pseudobulbs about 1 dm. long, very stout, compressed, 3 cm. or more in diameter, diphyllous (sometimes bearing more than 2 leaves). Leaves oblong-lanceolate, about 3 dm. long (up to 6 dm.), 4-7 cm. wide. Peduncle comparatively stout, arising from near the summit of a pseudobulb (erect? or drooping?), bearing numerous very large, nearly white, somewhat purple-tinged flowers in a dense, elongated raceme. Raceme about 3 dm. long. Bracts triangular-lanceolate, acute, 1.5-2 cm. long, about 4 mm. wide at base. Ovary very strongly winged, distantly resembling an auger on account of the spiral turnings of the wings. Lateral sepals 1.5 cm. long, linear-falcate, tapering to an acute apex from a 6 mm. broad base. Upper sepal linear, 1.9 cm. long, 3 mm. wide, tapering gradually to an obtuse tip. Petals similar to the lateral sepals, 1.6 cm. long, about 4 mm. wide at base. Labellum 11-11.5 mm. long, 3-lobed; lateral lobes comparatively small, curved, about 1 mm. long, 1 mm. wide, obtuse, 5.5 mm. from the base of the labellum; middle lobe 7 mm. long, 2.5 mm. wide, oblong, acute. Through the disc of the labellum extend 5 prominent nerves or carinae.

Epiphyte at 1,250 ft. alt. along the Alag River, flowers very fragrant, with odor of the swamp *Habenaria* of the eastern United States, Nov. 12, 1907, *Merrill* (No. 5519).

This robust *Eria* is allied closely to *E. rugosa* Lindl., *E. striolata* Reichb. f., *E. fragrans* Reichb. f., and *E. cochleata* Lindl. The strongly developed, spirally twisted wings of the ovary are very curious and quite distinctive of this species and *E. cochleata*.

***Eria* (§ *Hymeneria*) *Merrittii* Ames sp. nov.**

Pseudobulbs rather stout, cylindrical from a stout rhizome, 7-10 cm. long, about 5 mm. thick, 2-3-leaved at the summit. Leaves linear-lanceolate, about 12 cm. long, about 1.5 cm. wide, acuminate, acute. Peduncle short, about 4 cm. long, breaking forth from the upper part of the pseudobulbs. Bracts lanceolate, acute. Flowers white. Lateral sepals linear-lanceolate, acute, about 6-7 mm. long, 1.5 mm. wide at base. Upper sepal linear-lanceolate, about equal to the laterals. Petals

narrowly lanceolate, acute, about 6.5 mm. long, 1.5 mm. wide, 3-nerved, acute. Labellum lanceolate, ecallose, smooth, 4 mm. long, 1.5 mm. wide at base.

At 3,950 ft. alt. on Mount Halcon, June 15-27, 1906, *M. L. Merritt* (No. 4357).

Unfortunately the material on which the above description is based is not in good condition.

Eria vulpina Reichb. f. Bonpl. 3: 222 (1855).

Epiphyte in forest at 2,300 ft. alt. on Mount Halcon, flowers purplish, bracts yellowish red, Nov. 10, 1906, *Merrill* (No. 5501).

Endemic in the Philippines. Originally collected by H. Cuming on the island of Bohol.

Eria* (§ *Hymeneria*) *Woodiana Ames sp. nov.

Allied to *E. ovata* Lindl. Stems about 18 cm. long, leafy at the summit, closely sheathed. Leaves oblong-lanceolate, up to 3 dm. long, 3-4.5 cm. wide, acute. Inflorescence racemose, much shorter than the leaves. Flowers pale yellow. Peduncles about 1 dm. long, floriferous nearly to the base, breaking forth from the leafy summit of the pseudobulbs. Bracts ligulate, acute, about 5 mm. long. Lateral sepals oblong-lanceolate, acute, 6 mm. long, 2 mm. wide. Upper sepal narrowly lanceolate, 6.5 mm. long. Petals narrowly lanceolate, subacute, 5.5 mm. long, 1.5 mm. wide. Labellum 3-nerved, about 4 mm. long, orbicular at base, contracted at about the middle into the oblong, obtuse, apical half, monocallose at base in front of the claw.

Epiphyte in ridge forest at 3,000 ft. alt. on Mount Halcon, No. 10, 1906, *Merrill* (No. 5490).

PHREATIA Lindl.

Phreatia sulcata (Bl.) J. J. Smith Orch. Java 505 (1905).—*Dendrobium sulcatum* Bl. Bijdr. 347 (1825).—*Eria sulcata* Lindl. Orch. Pl. 69 (1830).

Epiphyte in ridge forest at 6,000 ft. alt. on Mount Halcon, flowers white, with faint odor, Nov. 15, 1906, *Merrill* (No. 5765).

Java and Sumatra.

Phreatia prorepens Reichb. f. Otia Bot. Hamb. 54 (1878).

Epiphyte in ridge forest at about 5,800 ft. alt. on Mount Halcon, flowers white, fragrant, Nov. 15, 1906, *Merrill* (Nos. 5758, 5814, 6190).

This very rare species was originally collected by the expedition commanded by Captain *Wilkes* which visited the Philippines between the years 1838 and 1842. One of the specimens collected by this expedition is preserved in the Gray Herbarium and bears the name *Eria (Phreatia) prorepens* in *H. G. Reichenbach's* hand. The material on which my determination is based agrees with this specimen in essential details.

Endemic in the Philippines.

BULBOPHYLLUM Thouars.

Bulbophyllum adenopetalum Lindl. Bot. Reg. 1842, Misc. p. 85.

Epiphyte at 3,550 ft. alt. on Mount Halcon, flowers odorless, nearly white, slightly straw-colored, Nov. 10, 1906, *Merrill* (No. 5684).

The petals of the specimens collected by Mr. *Merrill* are rather lanceolate and acute than spatulate as in *Lindley's* colored sketch of the Singapore plants on which is based the description of *B. adenopetalum*. The Mount Halcon specimens agree very well in habit with *Cuming's* Philippine specimens in *Lindley's* Herbarium determined as *B. adenopetalum* by *Lindley*. Unfortunately I have no record of the shape of the petals of *Lindley's* specimens aside from a copy of his drawing of the Singapore plant which he received from Messrs. *Loddiges* in 1842. This drawing shows a flower very similar to that of the specimens in question, if the petals are excepted. Notwithstanding the discrepancy that exists between the petals of *Lindley's* drawing and the Mount Halcon plant I refer the material collected by Mr. *Merrill* to *B. adenopetalum*.

B. adenopetalum belongs to a section of *Bulbophyllum* which appears to be very well represented in the Philippines, mainly characterized by the absence of well-developed pseudobulbs. This section is in great need of careful study and revision. To it belongs *B. dasypetalum* Rolfe.

Singapore and the Philippines.

Bulbophyllum (§ Monanthaparva) alagense Ames sp. nov.

Rhizome creeping, slender. Pseudobulbs approximate to each other or sometimes 2 cm. apart, pyriform, 4–6 mm. long, narrowed above, 3–4 mm. in diameter at base. Leaves ovate, apiculate, 1.2–2 cm. long, 4–9 mm. wide. Apicule 0.75 mm. long, awn-like. Scape very slender, filiform, exceeding the pseudobulbs, 8–11 mm. long, sheathed at base by a tubular, truncate, 1–2 mm. long bract. Flower solitary, pale yellow, nearly white. Pedicel slender, graceful, subtended by a loose, tubular, obliquely truncate, apiculate, 2 mm. long bract, which is dilated above. Sepals triangular-lanceolate, 5–7 mm. long, caudate-tipped, the tails about 4 mm. long. Petals minute, about 2 mm. long, spatulate, acute. Labellum about 1.5 mm. long, strongly curved, 3-lobed; lateral lobes erect, half-round, when spread out forming an orbicular plate, 1 mm. long, 1 mm. wide; middle lobe fleshy, oblong, obtuse, about 1 mm. long. Column minute with blunt wings.

On mossy branches overhanging the water along the Alag River, at 1,250 ft. alt., Nov. 12, 1906, *Merrill* (No. 5494).

Bulbophyllum dasypetalum Rolfe in Ames Orchidaceæ, fasc. 1, p. 98, with fig. (1905).

Epiphyte at 3,550 ft. alt. on Mount Halcon, flowers odorless, pale yellow, Nov. 10, 1906, *Merrill* (No. 5649).—Same locality, Nov. 15, 1906, *Merrill* (No. 6129).—Same locality on exposed ridge at 4,500 ft. alt., Nov. 14, 1906, *Merrill* (No. 5719).

Type from Mount Mariveles, Province of Bataan, Luzon.

Bulbophyllum (§ *Monanthaparva*) *halconense* Ames sp. nov.

Rhizome thread-like, less than 1 mm. thick. Pseudobulbs 1–3 cm. apart, round-pyriform when mature, rugose when dry, about 5 mm. long, about 4 mm. in diameter at base. Leaves narrowly elliptic-oblong, very fleshy (not apiculate), 1.5–2.5 cm. long, 4–6 mm. wide, acute, contracted into a very slender petiole. Scape exceeding the pseudobulbs, filiform, 1.5–3 cm. long, sheathed at base. Flower solitary, relatively large. Pedicel filiform, subtended by a tubular, obliquely truncate, apiculate bract dilated at its mouth. Lateral sepals narrowly lanceolate, caudate-tipped, 12–14 mm. long, about 3 mm. wide near the base. Upper sepal similar to the laterals, 12–14 mm. long, caudate-tipped. Petals ovate, acute, 5 mm. long, 2.5 mm. wide. Labellum lanceolate from a cordate base, acute, dilated at the middle, 3.5–4 mm. long, 2 mm. wide. (From dried specimens it appears to have been strongly convex in life.) Column short with a minute tooth in front at about the middle.

On trees in ridge forest, flowers dark purple, at 4,500 ft. alt. on Mount Halcon, Nov. 16, 1906, *Merrill* (No. 5832). On the same sheet with the type is a small species of the *Monanthaparva* section with much smaller flowers and shorter scapes.

Bulbophyllum (§ *Racemosae*) *Merrittii* Ames sp. nov.

Near *B. cylindraceum* Lindl. Roots copious. Rhizome creeping. Pseudobulbs small, about 1 cm. long, about 5 mm. thick, when mature surrounded by the elongated fibrous remains of sheathing bracts. Leaves coriaceous, 7–16 cm. long, 2–3.2 cm. wide, rounded at the tip, gradually tapering into the comparatively slender, about 3 cm. long petiole. Scape slender, exceeding the leaves, provided with several distant, closely appressed bracts. Bracts of the inflorescence minute, triangular, 1 mm. long, acute. Flowers in a dense, slender, 4–5 cm. long raceme. Lateral sepals strongly deflexed, ovate-falcate, subobtuse, 3-nerved, 2.5–3 mm. long, 1.25 mm. wide near the middle. Upper sepal ovate-lanceolate, subobtuse, 2.75–3 mm. long, about 1.5 mm. wide at base. Petals oblong, obtuse, 1-nerved, 1.5 mm. long, 0.75 mm. wide. Labellum lingulate, 1.5 mm. long, 1 mm. wide, rounded-obtuse at the tip, very fleshy with two callus-like thickenings at base. Column minute.

At 1,475 ft. alt. on Mount Halcon, June 15–27, 1906, *M. L. Merritt* (No. 4338).

Bulbophyllum (§ *Monanthaparva*) *mindoreense* Ames sp. nov.

Rhizome inconspicuous, concealed by the depressed, 3–4 mm. long pseudobulbs, which form a continuous, sometimes branching chain, which is closely appressed to the bark of trees on which the species is epiphytic. Leaves lanceolate, acute, 6–8 mm. long, up to 3 mm. wide, shortly petiolate. Scapes filiform, up to 4 cm. long. Flower with a very long pedicel, apparently without a subtending bract, the pedicel

being fully 5 mm. long. Floral bract tubular, obliquely truncate. Flower straw-yellow, relatively large. Lateral sepals narrowly lanceolate, acute, 3-nerved, 8 mm. long, 2 mm. wide below the middle, margin minutely ciliolate. Upper sepal similar to the laterals, about equally long. Petals linear-oblong, subspathulate, acute, 1-nerved, 3 mm. long, about 0.75 mm. wide. Labellum linear-lanceolate, 3.5 mm. long, about 1 mm. wide. Column 1 mm. long, with a tooth or protuberance in front near the base or below the middle.

Epiphyte in deep shaded ravine at 3,000 ft. alt. on Mount Halcon, Nov. 27, 1906, *Merrill* (No. 5796).

Pseudobulbs as in *B. cernuum* (Bl.) Lindl.

Bulbophyllum (§ *Monanthaparva*) *pleurothalloides* Ames sp. nov.

Rhizome obscure. Pseudobulbs 3 mm. long, much depressed, forming a chain. Leaves about 1 cm. long, 2–4 mm. wide, oblanceolate to spathulate, obtuse, minutely apiculate, contracted below into a slender petiole. Scapes filiform, elongated, exceeding the leaves, 3 cm. long, with scarious sheaths at base, and with a tubular obliquely truncate bract subtending the solitary, minute, brownish-yellow flower. Lateral sepals lanceolate, acute, about 4 mm. long, 2.5 mm. wide, 3-nerved. Upper sepal similar and equal to the laterals. Petals lanceolate, 2 mm. long, 0.75 mm. wide. Labellum lanceolate-cordate, obtuse, or subsagittate, 2 mm. long, 1 mm. wide at base, about 0.5 mm. wide near the tip. Column 1 mm. long.

On mossy trunks of trees at 4,500 ft. alt. on Mount Halcon, Nov. 14, 1906, *Merrill* (No. 6128).

In habit allied to *B. cernuum* (Bl.) Lindl. but with very different leaves. The general aspect of the plant when in flower recalls some species of *Pleurothallis*.

Bulbophyllum vagans Ames and Rolfe *Orchidaceæ*, fasc. 2 (1907) *ined.*

Epiphyte on mossy tree trunks in ridge forest at 6,500 ft. alt. on Mount Halcon, flowers odorless, straw colored, Nov. 21, 1906, *Merrill* (No. 6217).

Endemic in the Philippines.

Bulbophyllum vagans var. *angustun* Ames var. nov.

Differs from the type in its linear-lanceolate, acuminate, acute, 9–13 cm. long, 1–1.5 cm. wide leaves.

Epiphyte in mossy forest on tree trunks at 650 ft. alt. on Mount Halcon, flowers greenish yellow, Nov. 21, 1906, *Merrill* (No. 6218).

This variety is very remarkable in that it agrees with *B. vagans* in all respects except foliage. The leaves of *B. vagans* are oblong-ovate, abruptly rounded at base and subobtuse, 4–7 cm. long, 3 cm. wide.

Bulbophyllum sp.

At 2,950 ft. alt. on Mount Halcon, June 15–27, 1906, *M. L. Merritt* (No. 4360).

A single specimen insufficient for description.

Bulbophyllum sp.

Balete, Baco River, flowers yellowish, April-May, 1905, *R. C. McGregor* (No. 329).

A single specimen found on a fallen tree trunk.

Bulbophyllum sp.

Epiphyte on exposed ridge at 4,500 ft. alt. on Mount Halcon, Nov. 14, 1906, *Merrill* (No. 5833).

A single specimen insufficient for description.

THELASIS Bl.**Thelasis carinata** Bl. *Bijdr.* 386 (1825).

Epiphyte in humid forest at 500 ft. alt. along the Alag River, flowers odorless, brownish, except white tips of petals, Nov. 7, 1906, *Merrill* (No. 5679).

Java, Sumatra and Borneo.

PHALAENOPSIS Bl.**Phalaenopsis Aphrodite** Reichb. f. *Hamb. Gartenz.* 18: 35 (1862).

Epiphyte in forest at 300 ft. alt. along the Alag River, flower odorless, pure white, except for the purple-striped and spotted labellum, Dec. 3, 1906, *Merrill* (No. 5845).

Very nearly allied to, if not merely a form of, *P. amabile* Bl.

Philippines and Formosa.

SARCANTHUS Lindl.**?Sarcanthus striolatus** Reichb. f. *Gard. Chron.* n. s. 18: 168 (1882).

On large boulders in Alag River, at 500 ft. alt., flowers greenish, labellum white, turning yellowish, Nov. 6, 1906, *Merrill* (No. 5517).

Endemic in the Philippines.

SACCOLABIUM Bl.**?Saccolabium compressum** Lindl. *Bot. Reg.* 1840, misc. p. 9.

Epiphyte in mossy forest at 6,000 ft. alt. on Mount Halcon, Nov. 18, 1906, *Merrill* (No. 5564).

Although the material on which the above determination is based is in fruit, it agrees well with *S. compressum* Lindl. in habit and general aspect.

Endemic in the Philippines.

ANGRAECUM Thouars.**Angraecum philippinense** Ames sp. nov.

Plants 3-6 cm. high. Roots very fleshy. Leaves elliptic-oblong, obtuse, 2-5.5 cm. long, 0.6-1.4 cm. wide, on contracted stems. Peduncles fleshy, stout, conspicuously winged, few-flowered, about 4 cm. long. Bracts rigid, fleshy, 5 mm. long, conduplicate, triangular, acute. Pedicels elongated, about 2.5 cm. long, including the ovary. Flowers large, white, odorless. Lateral sepals elliptic, rounded and very obtuse at the apex, about 2.2 cm. long, about 1.5 cm. wide. Upper sepal similar to the petals, cuneate at base, about 2.2 cm. long, 14-15 mm. wide. Petals

broadly spathulate, about 2.2 cm. long, 1.5 cm. wide, very obtuse. Labellum 3-lobed; middle lobe oblong, rounded at the tip, 9 mm. long, about 7.5 mm. wide; lateral lobes somewhat similar to the middle lobe, but shorter, 4-5 mm. long, 6.5 mm. wide at base. Spur slender, 3.5 cm. long. Column about 7 mm. long, rather stout.

Epiphyte at about 2,500 ft. alt. on forested slopes of Mount Halcón, Nov. 28, 1906, *Merrill* (No. 5698).

THRIXSPERMUM Lour.

Thrixspermum McGregorii Ames sp. nov.

Stem about 5 mm. in diameter. Leaves oblong, falcate, acute or subacute, about 12 cm. long, about 1.5 cm. wide. Scapes very slender, almost filiform, shorter than the leaves, about 6 cm. long, naked, bearing a short raceme of minute flowers. Floral bracts minute, triangular, acute. Lateral sepals ovate, subacute, 1.5 mm. long, less than 1 mm. wide near the middle. Upper sepal strongly concave, narrower than the laterals, 1.5 mm. long. Petals somewhat oblanceolate or spathulate, obtuse, slightly exceeding 1 mm. in length, 0.5 mm. wide. Labellum about 1 mm. long, 3-lobed; lateral lobes semi-rotund, erect, 0.5 mm. long and about 0.5 mm. wide; middle lobe with a minute lobule on each side, one in front of each lateral lobe, otherwise fleshy, minute, blunt. Flowers when spread out 3 mm. across.

Growing on fallen tree near Balete, Baco River, April 23, 1905, *R. C. McGregor* (No. 288).

This is a very small-flowered species of a most puzzling group, closely allied to *Dendrocolla Zollingeri* Reichb. f.

Thrixspermum sp.

Binabay River, Nov., 1906, *Merrill* (No. 5539). A single specimen.

Thrixspermum sp.

Mount Halcón, Nov. 1906, *Merrill* (No. 5691). Specimen in fruit.